



## DJ BASIN, CO

Once the drilling rig leaves a well pad, several pieces of equipment are installed on location to support well completion activities and to allow efficient and safe production of natural gas. Much of this equipment will stay on location as long as the wells are producing – up to 20 or 30 years, depending on the area.

### WHAT TYPE OF EQUIPMENT IS NEEDED?

The producing well pad generally consists of five types of above-ground equipment:

- 1) Wellheads
- 2) Separation Units
- 3) Tanks
- 4) Combustors
- 5) Remote Telemetry Unit (RTU)

In addition, underground piping interconnects this equipment and sends the gas into the gathering pipelines and on to sales pipelines.

### WELLHEADS

There is a wellhead on the pad for every well drilled (2-4 on average). The wellheads are made up of a metal housing of tubes, valves and seals, often referred to as the “Christmas tree,” which regulates the extraction of natural gas from the underground well. It also prevents any leaking of natural gas out of the well and blowouts which can be caused by high pressure formations. Natural gas flows under pressure to the wellhead, and is piped to the separation unit.

### SEPARATION UNIT

The Separation Unit removes liquid hydrocarbons and water from the gas stream. Natural gas located underground is very different from the gas used to heat homes and businesses. Natural gas that reaches the consumer is composed almost entirely of methane. Natural gas at the wellhead contains additional components, including ethane, propane and butane.

The liquids removed from the gas stream are essentially water (produced from the formation along with the gas), referred to as “produced water,” and condensate. Produced water is high in salt content and nonpotable. Condensate is recovered at the surface and is a mixture of liquid hydrocarbons that result from the condensation formed due to a change in pressure as gases are brought out of the ground. Condensate is almost pure gasoline in composition (unrefined and containing no additives).

Condensate and produced water are removed from the gas stream and sent from the separation unit to be stored temporarily in onsite tanks.

All separation unit pressure retaining equipment is fabricated to American Society of Mechanical Engineers (ASME) specifications and codes.

### TANKS

The number and size of tanks on a particular pad varies depending on the amount of liquids produced. The tanks provide temporary storage of produced

### ENCANA'S COMMITMENT

- We strive to employ the best available industry technologies.
- We are committed to maintaining or exceeding best available practices in safety and environmental stewardship.



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liquids (water and condensate) and allow for natural separation of hydrocarbons from water. The lighter hydrocarbons float to the top of the tank and the water remains at the bottom. The liquids are removed from the tank via truck or pipeline. The remaining water is disposed of per COGCC regulations.

Each tank or group of tanks on a well pad is enclosed by an earthen berm and a corrugated metal ring large enough to contain 110% of the volume of the tanks. Although not required by regulation, EnCana places a plastic liner below each containment ring. Colorado Oil and Gas Conservation Commission (COGCC) regulations require that tanks be placed a minimum of 75 feet from any ignition source, 50 feet from a production unit/separator, and 75 feet from a wellhead. In addition, tanks must be a minimum of 200 feet from any residence. EnCana places signs on the outside of each tank, identifying the contents.

Every tank is constructed to American Petroleum Institute (API) standards, US EPA Spill Prevention Control and Countermeasure (SPCC) regulations, and COGCC requirements.

#### **COMBUSTORS**

The combustor is a tall, cylindrical piece of equipment ranging from 10 to 30 feet in height and 2 feet or less in diameter that burns volatile organic compounds (VOCs) that may accumulate in the tanks. A specified volume of VOCs are allowed to accumulate in the tank, then are automatically released to the combustor, through piping. The VOCs are ignited and burned through the length of the combustor. EnCana follows all state requirements for placement of combustors on well

pads, based on air permitting procedures. In addition, we voluntarily place combustors in sensitive areas based on wind direction, topography, and proximity to homes. Combustors are monitored on a daily basis to ensure continuous operation.

#### **REMOTE TELEMETRY UNIT**

In addition to the wellheads, separation unit, tanks, and combustors, additional equipment to remotely monitor gas production is installed on each location.

- Approximately 60% of EnCana's wells in the DJ Basin are automated.
- Automation enhances production, allows for minimal well-site visits and increases safety.
- Production equipment is connected to a Supervisory Control and Data Acquisition (SCADA) system via solar powered Remote Telemetry Units.
- The SCADA system gathers and analyzes real-time well data including electronic flow measurements, tank levels, and pressure which is transmitted to EnCana's Parachute office.

#### **ADDRESSING ADDITIONAL LANDOWNER/NEIGHBOR CONCERNS**

EnCana works with individual landowners to minimize the visual impacts of the production equipment and to minimize or eliminate public access to a landowner's property. At the entrance to each well pad, EnCana places signs that identify EnCana as the operator of the well, identify the well location, and display emergency phone numbers, as well as a list of safety precautions.

Well pads are monitored to ensure safe and efficient

operations and for maintenance purposes. Continuous monitoring is done via the RTU, and EnCana personnel make routine site visits.

EnCana uses industry best practices for stormwater control, including placing berms around locations, proper grading to prevent runoff, and ensuring effective reclamation of natural plants and grasses.



**FOR MORE INFORMATION CONTACT:**  
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